

ON A NEW GENUS AND TWO NEW SPECIES OF MACRUROUS CRUSTACEA.¹

BY J. S. KINGSLEY.

I owe to Professor Hermon C. Bumpus, of Brown University, the privilege of examining a small shrimp which he obtained from the Island of Naushon, one of the Elizabeth Islands, on the southern coast of Massachusetts. Under ordinary circumstances the publication of isolated descriptions is to be deplored, but in this case the procedure seems to have some justification. In the first place the whole Vineyard Sound region has been so thoroughly explored by the various parties of the U. S. Fish Commission and by the members of the Marine Biological Laboratory at Woods Hole, that novelties among the Decapod Crustacea are extremely rare. Again, the form in question is unique in several of its features, combining as it does the characters of several other genera or even of so-called families.

The specimen, which is the basis of the following description, was found July 13, 1893, in the sand of the small channels—the so-called gutters—of the island.

Genus *Naushonia*. Body somewhat depressed; mandibles stout, incurved, the cutting edge excavate anteriorly, the edge itself serrate; a two-jointed palpus present.

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First pair of feet larger than the second, the first pair being sub-chelate, the second non-chelate, and with simple carpus. Antennulæ biflagellate, the inner flagellum about half the length of the outer. Antennæ long; antennal scale small, not reaching to the external spine.

This genus resembles the Crangoninæ in the larger first pair of pereiopoda; in the sub-chelate character of the anterior hand, and the non-annulate carpus of the second pair of pereiopoda. It differs, however, from this sub-family, and from all the Crangonidæ as limited by Dana, in the excavate mandible and in the possession of a mandibular palpus. The cutting edge of the mandible recalls somewhat that of the Atyidæ, but the palpus is not present in that family. Mandibular characters also exclude it from all known Palæmonidæ. Subsequent investigations may show that it will be necessary to erect a new 'family' for its reception.

Naushonia crangonoides n. sp. Carapax somewhat cylindrieal, depressed in front, the rostral region being down curved. The rostrum flattened, tip broadly triangular, extending forward slightly beyond the eyes. Supra-orbital and antennal spines present; branchiostegal, hepatic and pterygostomian spines lacking. Cervical groove well marked in the middle but not reaching the antero-lateral margin of the carapax. A well-marked impressed line extends from the antero-external angle on either side to the posterior margin of the carapax. With these exceptions the carapax is smooth and is without pubescence. The abdomen is about a third longer than the carapax; is smooth and without carinæ, spines, etc. The telson is a third longer than broad, its tip regularly and broadly rounded, with a spine at each external angle. The eyes are on short peduncles, not visible from above, and with a minute pigment spot. The antennulæ are

biflagellate, the flagella short, the inner ramus being about half the length of the outer. The antennæ are provided with a small basal scale, the external spine of which reaches to the middle of the last joint of the peduncle, while the laminate portion of the scale falls short of the external spine. The external maxillipeds are pediform, elongate and furnished with extremely long hairs. The mandibular palpus bears simple hairs on its inner, and stiff bristles on its outer margin. The pereiopoda are provided with small exopodites. The first pair (only the left present in the specimen) are much the larger, and recall strongly the corresponding appendage in the Crangonids, but the occludent margin is more oblique than in most of the genera of that group. The meros is about twice as long as the ischium, and both these joints have the external margin acute. The short carpus is approximately an equilateral triangle in outline. The hand is flattened, the propodus being twice as long as broad, and externally with an acute edge. A long acute 'thumb' directed obliquely forward, at about the middle of the inner margin of the propodus, limits the occludent margin of the palm. This margin is acute and is provided with one large and several smaller teeth, the distribution of which is shown in the figure. The dactylus is bent, proximally, at a right angle, the distal portion being regularly arcuate and the tip acute. Its margins are sharp and the outer one is provided with a fringe of long hairs. The second pair of feet are the shortest, the carpus is simple, without annulations, and the dactylus is flattened and covered with a pubescence of long hairs. The remaining pereiopoda are slender, pediform and terminated by acute, slightly curved dactyli. The total length from the tip of the rostrum to the end of the telson is 26 mm.

Caradina pasadenæ n. sp. Carapax smooth, ecarinate above, rostrum long, three-fourths the length of the carapax, and exceeding by a third of its length the antennular peduncle. It is smooth above, its apex minutely bifid, and occasionally a small tooth beneath at about the level of the extremity of the antennular peduncle. Pterygostomian spine present, rather obtuse; external angle of the orbit spiniform. Antennula with external spiniform scale on the outer margin of the basal joint, reaching slightly in advance of the extremity of the joint, a small spine on the inner margin of the joint. Antennal flagella subequal in length, the length about equal to that of the carapax without the rostrum. Antennal scale about four times as long as broad, extending slightly beyond the antennular peduncle; its external margin straight, its apex obliquely rounded; antennal flagellum about two-thirds the length of the body. External maxillipeds pediform, the ischium strongly arcuate; the terminal joints partly fused and armed with two rows of spines; exopodite slender, filiform, joints obsolete. First pair of pereiopoda short, rather stout, the meros about equal to the propodus in length; hand of regular Atyid character, the fingers excavate and furnished with pencils of hairs. Second pair of pereiopoda about twice the length of first, the carpus simple, slightly obconical, and longer than any other joint; fingers excavate and pencilled. Remaining pereiopoda elongate, pediform, with moderate, slightly curved dactyli, spinulose beneath. Telson with straight, converging sides, its apex truncate and spinulose. Total length from tip of rostrum to end of caudal pleopoda 32 to 39 mm.

This species, which was sent me by Professor A. J. McClatchie of Throop University, is stated by him to be common in the streams about Pasadena, California. This species differs from *C. multidentata*, *serrata*, *acuminata*,

brevirostris, *exilirostris* and *typus* in its elongate rostrum. From *C. grandirostris* and *leucosticta* it differs in the lack of teeth upon the upper margin of the rostrum; from *C. americana* in the almost total lack of teeth on the lower surface of the rostrum, while *C. denticulata* is thrown out by similar characters. *C. tenuirostris* is a species of Virbius.

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EXPLANATION OF PLATE III.

Figs. 1-7. *Caradina pasadenæ*. Figs. 8-10. *Naushonia crangonoides*.

Fig. 1. Carapax.
" 2. Second pereiopod.
" 3. First pereiopod.
" 4. External maxilliped.
" 5. Base of antennæ.
" 6. Mandible.
" 7. Antennal scale.
" 8. Mandible.
" 9. Carapax, etc., from above.
" 10. Side view.

